UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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June 20, 2013

Mr. Jeff Long
Forest Plan Revision Team Leader
National Forests in Mississippi
200 S. Lamar St., Suite 500-N
Jackson, MS 39201

RE: EPA Comments on the Draft Environmental Impact Statement (DEIS) for the Revised Land and Resource Management Plan National Forests in Mississippi. CEQ #: 20130021.

Dear Mr. Long:

Pursuant to Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) reviewed the Draft Revised Land and Resource Management Plan (LRMP) for National Forests in Mississippi and the associated Draft Environmental Impact Statement (DEIS). The land and resource management plan is a revision to the Forest Service's 1985 Forest Plan.

The National Forests in Mississippi encompass 1.2 million acres ranging from pine forests in the Gulf Coastal Plain to Upland Hardwoods in Northern Mississippi. The DEIS analyzes the Forest Service's proposal to manage six National Forests in Mississippi for the next 10 to 15 years. The current plan "incorporates new information, evolving issues and trends, accounts for changes in national policies and directions and updated views from the public and other stakeholder groups. The intent of the plan is to reflect changing needs and values of the public while focusing on sustainable management of the National Forest System Lands for the Future. The forests in the revised plan include: Beinville National Forest; Chickasawhay Ranger District of the De Soto National Forest; De Soto Ranger District of the De Soto National Forest; Delta National Forest; Holly Springs National Forest; Homochitto National Forest; and Tombigbee National Forest.

EPA appreciates the Forest Service's consideration and evaluation of significant amounts of information and input during the preparation of the revised LMRP. The LMRP proposes Goals and Desired Conditions, Objectives, Standards and Guidelines, and Monitoring and Evaluation for the various revision topics, and allocates land to designated Management Areas on 1.2 million acres of national forest land in Mississippi to guide Forest management. We recognize that there are challenges involved in national forest management including; the complexities associated with the LRMP revision topics; statutory and regulatory requirements; and mixed-land ownership patterns. In addition, we acknowledge the Forest Service's effort to involve the public in land management decisions. The proposed action not only updates the goals

and desired conditions, objectives, standards and guidelines, and monitoring requirements. It also includes designations for 18 new Special Areas. The new management direction is focused on restoring natural resources and natural processes and creating and maintaining diverse wildlife habitats.

The DEIS addresses the following issues: (1) Native Ecosystem Restoration; (2) Biodiversity and Species Viability; (3) Forest Health; (4) Vegetation Management for Timber; (5) Fire Management; (6) Old Growth; (7) Watersheds and Water, Soils, Aquatic Resources, Riparian Environments; (8) Access Management; (9) Recreation; (10) Special Area Designations; (11) Land Use and Ownership; (12) Climate Change; (13) Minerals Management; and (14) Economic Benefits. EPA's comments include a review of the alternatives, environmental issues and ratings of both the environmental impact of the proposed action and the adequacy of the DEIS.

Five alternatives (A, B, C, D and E) are evaluated in the revision of the Land and Resource Management Plan (LRMP or Forest Plan) DEIS for the National Forests in Mississippi. Alternative A is the custodial management alternative which promotes minimal intervention by active management. Alternative B represents no change from the current LRMP. Alternative C is the preferred alternative and is the foundation for the Proposed Plan. Alternative D accelerates the restoration of historical forest conditions and Alternative E emphasizes improved forest health. EPA supports the identification of a preferred alternative in the DEIS.

EPA appreciates the comparison of alternatives description summary. According to the DEIS, the desired conditions of the ecosystem-based management areas do not vary under any of the alternatives considered. However, the rate that these conditions will be achieved and the actions required were the key differences. Alternative A will restore the fewest acres of native ecosystems during the life of the plan. This plan would favor hardwood components. Alternatives B and C assume current funding levels, but Alternative C places more emphasis on the integration of restoration efforts (pg 24). Alternative D results in an increase in the rate and acreage restored over the life of the plan. Alternative E further increases acreage restored as a result of thinning out more acres of forest resulting in improved forest health and resiliency. While Alternatives D and E appear to maximize the acreage restoration efforts, the DEIS indicates that additional funding would be needed to achieve these results.

EPA recommends management of National Forests place emphasis on sustaining the ecological values of healthy forests. This should include: Protection of water quality and yield, sensitive groundwater recharge areas, and undisturbed headwaters of streams and public drinking water supplies. Greater attention to the adverse impacts of logging roads and the value of undisturbed buffer zones along streams and rivers and the designation of wild and scenic rivers. Soil quality maintenance and nutrient stocks that hold the key to current and future forest productivity should also remain a priority. Conservation of forest biodiversity by reducing forest fragmentation (as a result of clearcuts and roads), avoiding harvest in vulnerable areas such as hardwood or old growth stands and riparian zones, and restoring natural structural complexity to cutover sites.

EPA commends the Forest Service on its attempt to identify and address issues such as climate change and invasive species such as cogon grass and kudzu which are threats to native species, development and population growth, changes in recreational patterns, including the use of off road/highway vehicles and land ownership patterns (interspersion of the National Forests with private homes) making consistent best management practices challenging, adaptive management plan to address changing conditions.

EPA understands the need for multiple-use activities and supports management of National Forests that place less emphasis on traditional harvesting and other consumptive uses (e.g., mining) and a greater emphasis on recreation and ecosystem enhancement. EPA rates this document EC-1 Environmental Concerns and no additional information requested See EPA Ratings Enclosure) . We have concerns about the potential biological impacts from these actions including stream sedimentation, loss of habitat, reduction of biodiversity, and species impacts.

We appreciate the opportunity to review the proposed action and appreciate the revised agency review schedule based on the regional receipt date of the document. Please contact Ntale Kajumba at 404 562-9620 or Ken Clark at (404) 562-8282, if you have any questions on our comments. When the FEIS is available for review, please send a minimum of one hard copy and one CD to EPA Region 4 for review to the address above.

Sincerely,

Heinz J. Mueller, Chief
NEPA Program Office
Office of Environmental Accountability

Enclosure: Summary of EPA Rating System
Detailed Comments and Articles

Detailed EPA Comments on Revised Land and Resource Management Plan National Forests in Mississippi DEIS.

ECOSYSTEM RESTORATION METHODS

EPA recommended that future forest land and resource management plan DEIS include more quantitative evaluation. One method for quantitative evaluating ecosystem restoration includes that of environmental accounting (see Odum, H.T. (1996*) Environmental Accounting: Emergy and Environmental Decision Making*, Wiley, U.S.A). Environmental accounting utilizes emergy principles to evaluate all of the processes in an ecological system by back calculating the solar energy that it took to get to an equilibrium state for the processes. The value is in solar emjoules and because all of the processes are calculated using the same metric, it is feasible to value all of the processes and relationships.

We have attached and/or referenced three other documents for your future consideration, *Assessing environmental costs and impacts of forestry activities: A multi-method approach to environmental accounting* by Elvira Buonocorea, Tiina Häyhää, Alessandro Palettob, Pier Paolo Franzesea, *Valuing Forest Ecosystem Services In Maryland And Suggesting Fair Payment Using The Principles Of Systems Ecology* and *Environmental Accounting Of Natural Capital and Environmental Services Of The Us National Forest System* by Elliott Campbell, 2008. For more information on energy analysis contact Dan Campbell at campbell.dan@epa.gov.

FOREST HEALTH AND PROTECTION

According to the DEIS, the three most important forest health issues for the National Forests in Mississippi are non-native invasive species, southern pine beetles and the need to improve old-growth. Overall forest health will be positively influenced by Alternatives C, D and E while Alternative A will result in the deterioration of the overall forest-wide forest health. The overall strategy for achieving healthy forests involves using a combination of vegetation management practices and prescribed burning to restore and maintain native ecosystems. The vegetative management emphasis is on thinning; converting loblolly and slash pine stands that are not on appropriate sites to longleaf and shortleaf pine forests; and restoring rare communities and old growth; which should improve native species diversity and resilience of ecological communities to non-native invasive species, disease and insect outbreaks, extreme weather disturbances associated with climate change, and other stressors. EPA notes that alternatives C-E, with implementation of best management practices, would appear to be the best approach for ecosystem restoration

FIRE MANAGEMENT AND AIR QUALITY.

The activity most likely to affect air quality is prescribed burning. The DEIS indicates that while Alternatives C, D, and E will provide the highest level of hazardous fuels reduction and ecological restoration and maintenance; it will also result in 220,000; 240,000 and 251,000 acres of prescribed fires, respectively. Alternative B, at an average annual prescribed fire program of 190,000 acres, will contribute to fuels management and ecological restoration, but will probably

relegate some restoration of rare ecological communities and control of non-native invasive plant species to occurrences embedded in large and landscape burns as has been done in the past with less emphasis on growing season burning. Alternative A will restrict the prescribed fires to four districts involving 121,000 acres.

Recommendation: EPA recommends that the Forest Service continue to comply with the federal and state guidelines associated with prescribed burns. EPA notes that Alternatives A and B will result in the less air quality impacts in the short-term. While Alternatives C, D, and E will result in the greatest hazardous fuels reduction and ecological restoration and maintenance, they will also contribute to the greater air quality impact. Increased prescribed burning during the growing season will result in more particulate matter and ozone formation. However, according to the DEIS the increase is not expected to affect the attainment of federal and state air quality standards.

WATER QUALITY

According to the DEIS, forest management activities are not anticipated to substantially or permanently impair water quality nor result in measurable changes to overall watershed condition ranking. The implement of mitigation measures, such as use of best management practices (BMP's) and adherence to forest standards and guidelines are proposed. Nevertheless, timber harvesting in forests will result in some soil and water impacts associated erosion, increased sedimentation, and reduction of water quality.

Recommendations: EPA supports the effective use of BMPs and adherence to forest standards and guideline for water quality. We recommend reducing the nonpoint source pollution of surface and ground waters that can result from forestry activities. These activities include but are not limited to:

- Tracking the implementation of best management practices (BMPs) used to control nonpoint source pollution generated by forestry practices.
- Developing water-quality monitoring plans to evaluate the effectiveness of forestry BMPs in meeting water-quality goals or standards.
- Design of monitoring projects and the selection of variables and methods to correlate BMP implementation with changes in stream water quality. Providing information on methods for sample site selection, sample size estimation, sampling, and result evaluation and presentation. The focus is to develop statistical approaches needed to collect and analyze data that are accurate and defensible.
- EPA supports efforts to implement the nonpoint source (NPS) total maximum daily load (TMDL) program. Nonpoint source TMDLs and watershed-based plans designed to implement the NPS TMDLs, provide the necessary link between actions on the ground and the water quality results to be achieved.
- EPA continues to support planning at the landscape level to address broader ecological concerns such as biodiversity, watershed maintenance and restoration, and forest fragmentation.
- EPA recommends that ecological and other environmental values should be the primary, driving factors in the identification, protection, and management of roadless areas in the National Forests.

SOILS

According to the DEIS, implementation of the best management practices, proper mitigation measures, and monitoring will result in minimal soil effects for all alternatives. The cumulative effects of management actions over time are not expected to reduce soil productivity. Mitigation measures for management activities such as timber harvesting, site preparation and prescribed burning should help maintain the litter layer in place, or replace the litter layer on exposed soils by seeding and fertilization and impacts associated with any one treatment should be recovered within three years.

Recommendations: EPA recommends commitments to best management plan, mitigation and monitoring should be documented in a summary tracking form of project commitments.

CLIMATE CHANGE

The previous forest plan did not address the increasing weather variability and climate change projected for the future. These issues are expected to continue to grow over the life of the revised forest plan. According to the DEIS, the key factors expected to affect Mississippi's Forests in the near term (10-15 years) include an increase in extreme weather events such as hurricanes, heat waves, droughts, tornadoes, floods, and lightning storms. Previous storms such as Hurricane Katrina resulted in damage to all of the National forests in MS including 300,000 acres of timber damage, and high winds and downed trees, blocked roads, closed trails, facilities and recreation site damage, and red-cockaded woodpecker tree damage and cluster loss.

The DEIS includes strategies that address the effects of increasing weather disturbances and responding to anticipated climate changes. These strategies are incorporated into the alternatives and include reducing vulnerability by maintaining and restoring resilient native ecosystems, enhancing adaptation by reducing impacts from serious disturbances and taking advantage of disruptions, using preventative measures to reduce opportunities for forest pests, and mitigating greenhouse emissions by reducing carbon loss from hurricanes.

National forests can play an important role in both mitigating and adapting to climate change. Mitigation measures focus on strategies such as carbon sequestration by natural systems, ways to increase carbon stored in wood products, ways to provide renewable energy from woody biomass to reduce fossil fuel consumption, and ways to reduce environmental footprints. Adaptation measures address ways to maintain forest health, diversity, productivity, and resilience under uncertain future conditions.

Recommendation: The DEIS indicates that the Forest Service's research activities are expected to help both public and private land managers better understand changing conditions and determine appropriate management approaches for both adaptation and mitigation.
EPA notes that by restoring native longleaf pine where loblolly and shortleaf pine currently exist, Alternatives C, D and E would result in a national forest less vulnerable to the effects of climate change than Alternative A.

MINERALS MANAGEMENT

An oil and gas leasing decision authorized lands on the National Forests in Mississippi to be available for Federal oil and gas leasing. The alternatives in the DEIS include the 2010 oil and gas leasing decision as part of an ongoing management direction. The only exceptions to the decision are congressionally designated wilderness areas and the deferred Sandy Creek RARE II Further Study Area. This EIS addresses the decision to make oil and gas leasing available on the Sandy Creek. AREA II study area. The DEIS indicates that Alternatives A and B would not allow oil and gas leasing in the Sandy Creek RARE II study area. Alternatives C, D, and E would permit oil and gas leasing in the Sandy Creek RARE II study area. However, certain restrictions associated with the 2001 Roadless Area Conservation Rule apply including no new road construction permits in the Sandy Creek RARE II study area;

Recommendation: EPA supports restrictions on new roadway construction in the Sandy Creek RARE II study area and protecting sensitive natural resources.

INFRASTRUCTURE/ROADS

The effect of vegetation management which varies by alternative on infrastructure is that alternatives C, D and E which have higher levels of timber harvests will provide higher levels of funding to upgrade and maintain existing roads. Alternative A, having a minimal level of timber harvest, would provide less funding for road maintenance. Because there is very little need for new road construction under any alternative, road infrastructure is expected to have little impact on other resources based on alternative. However, road maintenance and reconstruction would vary by alternative with greater need for these activities as vegetation management activities increase from alternative A through E.

ENVIRONMENTAL JUSTICE

EPA notes that the Environmental Justice Assessment included demographic information regarding low-income and minority populations. The DEIS indicates that benefits would accrue to all segments of the population and no disproportionate negative environmental or health impacts are anticipated. We also note that the DEIS indicates that no segments of the population identified that depend on subsistence consumption of fish, wildlife, or vegetation within the planning area.

Recommendation: The EJ analysis should indicate the efforts made to identify subsistence consumption within the planning area that targeted low-income and minority populations and summarize any EJ concerns raised during the public engagement process, particularly in those areas that experience higher minority and low-income populations.

FRAGMENTATION

Extensive clear cutting has resulted in the fragmentation of many forested ecosystems into smaller patches that have more forest edge exposed to open, cutover habitats (Harris 1984). The effects of such fragmentation on forest remnants include changes in the microclimate (Chen et al. 1995), in species composition, and in species behavior. Changes in species composition may include loss of some species as a result of unsuitable forest microenvironment competitive interactions with species at the forest edge, or insufficient total foraging habitat. The change in microclimate at the forest edge may also affect seed dispersal, movement of flying insects, decomposition rates, and size of plant and animal populations.

Recommendation: EPA recommends forest managers examine the effects of fragmentation on a species-by species basis with emphasis placed on threatened and endangered species and also "keystones" species that play an important role in an ecosystem relative to their abundance and whose removal has large ripple effects on other plants and animals as well as on ecological processes. To reduce the impact of timber harvesting on biodiversity, EPA recommends forest management consider the mosaic of forest patches on the landscape and the connectedness of habitat for forest species in planning future cuts.

Environmental Impact Statement (EIS) Rating System Criteria

EPA has developed a set of criteria for rating draft EISs. The rating system provides a basis upon which EPA makes recommendations to the lead agency for improving the draft EIS.

- Rating the Environmental Impact of the Action
- Rating the Adequacy of the Draft Environmental Impact Statement (EIS)

RATING THE ENVIRONMENTAL IMPACT OF THE ACTION

LO (Lack of Objections) The review has not identified any potential environmental impacts requiring substantive changes to the preferred alternative. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposed action.

EC (Environmental Concerns) The review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact.

EO (Environmental Objections) The review has identified significant environmental impacts that should be avoided in order to adequately protect the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). The basis for environmental Objections can include situations:

EU (Environmentally Unsatisfactory) The review has identified adverse environmental impacts that are of sufficient magnitude that EPA believes the proposed action must not proceed as proposed. The basis for an environmentally unsatisfactory determination consists of identification of environmentally objectionable impacts as defined above and one or more of the following conditions: .

RATING THE ADEQUACY OF THE DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS)

1. **(Adequate)** The draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

2. **(Insufficient Information)** The draft EIS does not contain sufficient information to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the

proposal. The identified additional information, data, analyses, or discussion should be included in the final EIS.

3. **(Inadequate)** The draft EIS does not adequately assess the potentially significant environmental impacts of the proposal, or the reviewer has identified new, reasonably available, alternatives, that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. The identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. This rating indicates EPA's belief that the draft EIS does not meet the purposes of NEPA and/or the Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS.